

in centimeters (or inches) the maximum magnetic east-west dimension of the area to be sampled. Designate the north-south and east-west dimensions (describing the west and south boundaries, respectively, of the area to be sampled), as the reference axes of a square-based grid system.

(ii) Use a random number table or random number generator to select a pair of coordinates that will locate the sample within the area to be sampled. The first coordinate in the pair is the measurement on the north-south axis. The second coordinate in the pair is the measurement on the east-west axis. Collect the sample at the intersection of an east-west line drawn through the measured spot on the north-south axis, and a north-south line drawn through the measured spot on the east-west axis. If the cleanup site is irregularly shaped and this intersection falls outside the cleanup site, select a new pair of sampling coordinates. Continue to select pairs of sampling coordinates until three are selected for each type of bulk PCB remediation waste or porous surface at the cleanup site.

(d) *Area of inference.* Analytical results for an individual sample point apply to the sample point and to an area of inference extending to four imaginary lines parallel to the grid axes and one half grid interval distant from the sample point in four different directions. The area of inference forms a square around the sample point. The sides of the square are parallel to the grid axes and one grid interval in length. The sample point is in the center of the square area of inference. The area of inference from a composite sample is the total of the areas of the individual samples included in the composite.

§ 761.286 Sample size and procedure for collecting a sample.

At each selected sampling location for bulk PCB remediation waste or porous surfaces, collect at least 20 milliliters of waste, or a portion of sufficient weight for the chemical analyst to measure the concentration of PCBs and still have sufficient analytical detection sensitivity to reproducibly measure PCBs at the levels designated in § 761.61(a)(4). Use a core sampler hav-

ing a diameter ≥ 2 cm and ≤ 3 cm. Collect waste to a maximum depth of 7.5 cms.

§ 761.289 Compositing samples.

Compositing is a method of combining several samples of a specific type of bulk PCB remediation waste or porous surface from nearby locations for a single chemical analysis. There are two procedures for compositing bulk PCB remediation waste samples. These procedures are based on the method for selecting sampling site locations in § 761.283(b) and (c). The single chemical analysis of a composite sample results in an averaging of the concentrations of its component samples. The area of inference of a composite is determined by the area of inference of each of its component samples as described in § 761.283(d). Compositing is not mandatory. However, if compositing is used, it must be performed in accordance with the following procedures.

(a) *Compositing in the field or in a laboratory.* Compositing may occur either in the field or in a laboratory. Prepare composite samples using equal volumes of each constituent or component sample. Compositing samples must be from the same type of bulk PCB remediation waste or porous surface (see the example at § 761.283(a)(2)). Mix composite samples thoroughly. From each well-mixed composite sample, take a portion of sufficient weight for the chemical analyst to measure the concentration of PCBs and still have sufficient analytical detection sensitivity to reproducibly measure PCBs at the levels designated in § 761.61(a)(4).

(b)(1) *Compositing from samples collected at grid points in accordance with § 761.283(b).* There are two kinds of composite sampling procedures depending on the original source of contamination of the site.

(i) The first procedure is for sites with multiple point sources of contamination (such as an old electrical equipment storage area, a scrap yard, or repair shop) or for unknown sources of contamination. Under this compositing scheme, composite a maximum of nine samples for each type of bulk PCB remediation waste or porous surface at the cleanup site. The maximum dimensions of the area enclosing

a nine grid point composite is two grid intervals bounded by three collinear grid points (3.0 meters or approximately 10 feet long). Take all samples in the composite at the same depth. Assure that composite sample areas and individually analyzed samples completely overlay the cleanup site.

(ii) The second procedure is for a single point source of contamination, such as discharge into a large containment area (e.g., pit, waste lagoon, or evaporation pond), or a leak onto soil from a single drum or tank. Single point source contamination may be from a one-time or continuous contamination. Composites come from two stages: an initial compositing area centered in the area to be sampled, and subsequent compositing areas forming concentric square zones around the initial compositing area. The center of the initial compositing area and each of the subsequent compositing areas is the origin of the grid axes.

(A) *Definition of the initial compositing area.* The initial compositing area is based on a square that contains nine grid points, is centered on the grid origin, and has sides two grid intervals long. The initial compositing area has the same center as this square and sides one half a grid interval more distant from the center than the square. The initial compositing area has sides three grid intervals long.

(B) *Definition of subsequent compositing areas.* Subsequent composite sampling areas are in concentric square zones one grid interval wide around the initial compositing area and around each successive subsequent compositing area. The inner boundary of the first subsequent compositing area is the outer boundary of the initial compositing area. The outer boundary of the first subsequent compositing area is centered on the grid origin, has sides one grid interval more distant from the grid origin than the inner boundary, and is two grid intervals longer on a side than the inner boundary. The inner boundary of each further subsequent compositing area is the outer boundary of the previous subsequent compositing area. The outer boundary of each further subsequent compositing area is centered on the grid origin, has sides one grid interval

more distant from the grid origin than the inner boundary, and is two grid intervals longer on a side than the inner boundary.

(C) *Taking composite samples from the initial and subsequent compositing areas.*

(1) Select composite sampling areas from the initial compositing area and subsequent compositing areas such that all grid points in the initial compositing area and subsequent compositing areas are part of a composite or individual sample.

(2) A person may include in a single composite sample a maximum of all nine grid points in the initial compositing area. The maximum number of grid points in a composite sample taken from a subsequent compositing area is eight. These eight grid points must be adjacent to one another in the subsequent compositing area, but need not be collinear.

(2) *Compositing from samples taken at grid points or pairs of coordinates in accordance with § 761.283(c).* Samples collected at small sites are based on selecting pairs of coordinates or using the sample site selection procedure for grid sampling with a smaller grid interval.

(i) *Samples collected from a grid having a smaller grid interval.* Use the procedure in paragraph (b)(1)(i) of this section to composite samples and determine the area of inference for composite samples.

(ii) *Samples collected from pairs of coordinates.* All three samples must be composited. The area of inference for the composite is the entire area sampled.

§ 761.292 Chemical extraction and analysis of individual samples and composite samples.

Use either Method 3500B/3540C or Method 3500B/3550B from EPA's SW-846, Test Methods for Evaluating Solid Waste, or a method validated under subpart Q of this part, for chemical extraction of PCBs from individual and composite samples of PCB remediation waste. Use Method 8082 from SW-846, or a method validated under subpart Q of this part, to analyze these extracts for PCBs.